Rural family medicine training site

Proposed framework

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Abstract

Objective To develop a framework for a successful rural family medicine training program and to assess the potential for a rural family medicine residency training program using the Weyburn and Estevan areas of Saskatchewan as test sites.

Design A mixed-method design was used; however, the focus of this article was on the qualitative data collected. Questions formulated for the semistructured interviews evolved from the literature.

Setting Rural Saskatchewan.

Participants Community physicians and representatives from the Sun Country Regional Health Authority, the Saskatchewan Ministry of Health, and the University of Saskatchewan.

Methods The data were documented during the interviews using a laptop computer, and the responses were reviewed with participants at the end of their interviews to ensure accuracy. The qualitative data collected were analyzed using inductive thematic analysis.

Main findings Through the analysis of the data several themes emerged related to implementing a rural family medicine residency training program. Key predictors of success were physical resources, physician champions, physician teachers, educational support, administrative support, and other specialist support. Barriers to the development of a rural family medicine training site were differing priorities, lack of human resources, and lack of physical resources.

Conclusion A project of this magnitude requires many people at different levels collaborating to be successful.

EDITOR'S KEY POINTS

- This study aimed to identify the key components required for developing a rural family medicine training site using test sites in rural Saskatchewan.
- There was nearly universal support for the basic idea of rural residency training promoting future retention of physicians through the unique rural learning experience. Other themes that emerged included the importance of stakeholder roles and perspectives as key predictors of success, and the requirement of key resources for a program of this magnitude.
- Current barriers to the development of the Weyburn and Estevan test sites as rural family medicine training sites were differing priorities, lack of human resources, and lack of physical resources. These barriers can be extrapolated to other sites.

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Site pour une résidence en médecine familiale rurale

Cadre proposé

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Résumé

Objectif Élaborer un cadre d'application pour un programme de formation efficace en médecine familiale rurale et évaluer la possibilité d'utiliser les régions de Weyburn et d'Estevan en Saskatchewan comme sites d'essai.

Type d'étude Étude utilisant des méthodes mixtes; toutefois cet article porte surtout sur les données qualitatives recueillies. Les questions utilisées dans les entrevues semi-structurées s'inspiraient de la littérature.

Contexte La Saskatchewan rurale.

Participants Médecins communautaires et représentants de la Sun Country Regional Health Authority, du ministère de la Santé de la Saskatchewan et de l'Université de la Saskatchewan.

Méthodes Les données ont été enregistrées à l'aide d'un ordinateur portable durant les interviews et les réponses ont été révisées en présence des participants à la fin des interviews pour s'assurer de leur exactitude. Les données qualitatives recueillies ont été analysées par analyse thématique inductive.

Principales observations L'analyse des données a fait ressortir plusieurs thèmes en rapport avec la création d'un programme de résidence en médecine familiale en milieu rural. Les principaux prédicteurs de succès étaient les ressources physiques, des médecins convaincus, des enseignants médecins, un soutien éducationnel et administratif, et le soutien d'autres spécialistes. Les obstacles à la création d'un tel programme étaient l'existence de priorités différentes et le manque de ressources humaines et physiques.

Conclusion La réussite d'un projet de cette ampleur requiert la collaboration de plusieurs intervenants à différents niveaux.

POINTS DE REPÈRE DU RÉDACTEUR

- Cette étude voulait déterminer les composantes essentielles permettant de développer un site de formation en médecine familiale rurale à l'aide de sites d'essai en Saskatchewan rurale.
- Il y avait un consensus presque total à l'idée qu'une résidence rurale favoriserait éventuellement la rétention de médecins grâce à ce type unique d'apprentissage. Parmi les autres thèmes retenus, mentionnons l'importance des rôles et des opinions des intervenants en tant que prédicteurs de succès et la nécessité de ressources clés pour un programme de cette importance.
- Parmi les obstacles à l'utilisation des sites de Weyburn et Estevan pour vérifier la valeur des sites ruraux de médecine familiale, mentionnons l'existence de priorités différentes, et le manque de ressources humaines et physiques. Ces obstacles peuvent s'appliquer à d'autres sites.

Cet article a fait l'objet d'une révision par des pairs.
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The shortage of rural physicians is not a new problem; however, the recruitment and retention of rural family physicians is complex and multifaceted.[1-6] Nowhere else is the all-encompassing nature of the family physician role more evident than in rural family medicine. Without relying on advanced diagnostic equipment and immediate support from other specialists, these physicians are extremely skilled, self-directed, hands-on practitioners.[7] Growing evidence in the literature has demonstrated that medical students and residents taught at rural family medicine residency training sites with a commitment to rural and community health are more likely to practise medicine as a career in rural locations.[8-12] Furthermore, studies also show that physicians who were raised in rural communities are likely to return to rural communities to practise.[6,9,12-16] There are many factors that contribute to physicians choosing rural practices. Physicians whose training focused on "the realities of rural living" stated they were better prepared for rural practice, suggesting rural rotation objectives should include the nonclinical cultural aspects of practising rural medicine.[3,4,16-23] Rural exposure and effective rural medical education must be the cornerstones of any long-term physician work force strategy designed to address the inequitable distribution of medical practitioners in Canada.[3,22,24-31]

Learner-identified advantages of rural rotations fall into 3 categories: clinical training, professional skill set, and lifestyle. Clinical training advantages include a resident-driven curriculum, one-on-one training, and developing the ability to function independently of urban tertiary-level supports.[26,32,33] Professional skill set advantages include clinical experiences in environments with little backup, greater independence, increased hands-on experience, and access to more procedures compared with urban counterparts.[26,27,32,33] Finally, lifestyle benefits include identifying rural mentors and role models, developing a social network in a rural setting, and developing an appreciation of the rural lifestyle.[6,26,27]

The literature has also identified several factors that act as both professional and personal barriers to practising rural medicine for prospective physicians and their physician teachers. Professional impediments include long working hours and limited access to technology.[34] Personal challenges include social and professional isolation, lack of employment opportunities for spouses and high-quality education for children, as well as the lack of proximity to family support.[2,6,27,34] Physician teacher barriers are categorized as infrastructural, professional, and monetary. Infrastructural barriers include lack of practice organization and teaching space, and difficulty coordinating the groups involved.[2,35] Professional challenges include increased liability, time constraints, and lack of training to be an effective educator.[26,27] Finally, monetary barriers include inadequate funding for teaching, loss of supervisor income, and unattractive remuneration service agreements.[35]

Distributed medical education has grown tremendously in the past decade to respond to the growing need for rural physicians in Canada. As Saskatchewan is largely a rural province, there is a growing need for teaching sites to be developed to provide a pool of rural doctors. We endeavoured to identify the key components required for developing a rural family medicine training site using the Weyburn and Estevan areas of Saskatchewan as the model test sites. The key academic and community stakeholders required were contacted and a needs assessment framework was developed to assist with the expansion of these sites and future rural family medicine residency training sites.[25,36]

Six key criteria that have been proposed to be essential for success include identifying a medical practice of sufficient size with exposure to subspecialty physicians; obtaining commitment from a sufficient number of rural family physicians to act as preceptors at a rural training site; identifying the resources required by rural physician preceptors for educating medical students and residents; determining the expected additional financial and time costs to the community practices and local hospitals involved; determining if adequate outpatient and hospital facility space is available to accommodate learners; and identifying key clinical exposures for learners to assess if there is an adequate mix of hospitalized patient and outpatient exposures.[3,9,25,30,37,38]

METHODS

A mixed-method design was used; however, the focus of this article was on the qualitative data collected. Questions formulated for the semistructured interview evolved from the literature. A certificate of approval was received from the University of Saskatchewan's Behavioural Research Ethics Board. Stakeholders representing the following groups were interviewed: community physicians, decision makers in Sun Country Regional Health Authority, decision makers in the Department of Academic Family Medicine at the University of Saskatchewan, decision makers in the College of Medicine at the University of Saskatchewan, and decision makers in the Saskatchewan Ministry of Health. The project was explained to the participants before they were invited to take part in a face-to-face interview to explore the various elements required to develop a rural family medicine residency training program. The data were documented during the interviews using a laptop computer, and the responses were reviewed with participants at the end of their interviews to ensure accuracy, a strategy known as *member checking*. Review of the collated data focused on illumination

and understanding rather than causal determination, prediction, and generalization.[39,40] The qualitative data were analyzed using inductive thematic analysis, identifying themes through careful reading and re-reading.[41,42]

FINDINGS

Through the analysis of the data, the following themes evolved as "answers" to the research question and were further clarified by responses by the participants:

- Rural placement equals rural retention.
- Stakeholder roles and perspectives are key predictors of success.
- The success of a program of this magnitude requires key resources.

Rural placement equals rural retention

Virtually every stakeholder assumed that rural placement equaled rural retention. One stakeholder stated

> there are many anticipated benefits including recruitment and retention of physicians in rural Saskatchewan communities, opportunity for the community to sell itself and [the] rural lifestyle, and improved quality of patient care which comes with having a residency program in the community.

While actual retention is difficult to measure statistically, there was nearly universal support for the basic idea of rural residency training promoting future retention of physicians through the unique rural learning experience, best illustrated by this response:

> For the resident learner, there is improved clinical skill and equivalent academic skill with a broader spectrum of disease and disease origin. For example, learners develop a concept of what overcrowding can do since they see how their patients live. Rural residents have a greater sense of social responsibility due to on-the-ground exposure, smaller working groups, and working more closely in teams. Rural learners retain the empathy they had when they started medical school compared to their urban counterparts who experience a lack of continuity and, therefore, lose their sense of altruism.

Stakeholder roles and perspectives

The University of Saskatchewan and the Ministry of Health representatives were very invested in the model of distributed medical education, in which rural communities increasingly serve as training sites to relieve burgeoning pressure on overtaxed urban resources. This model uses family medicine residency training programs and then expands to accommodate learners from other health science disciplines such as pharmacy, nursing, nutrition, and paramedics. In some communities, Estevan included, there are existing training resources for components of programs in nursing and paramedics. There is also some teaching of medical interns being done in both Estevan and Weyburn. Family physician stakeholders preferred an alternative model designed around the unique attributes of the communities and the physicians working within them to provide residents with the skill set required for rural practice in the hope that the residents would choose to practise in the host community or another rural setting.

Key resources

Physical resources. All of the stakeholders interviewed had clear ideas about the physical resources that currently existed for residency programs and the resources that required further development. However, there were varying opinions about the acceptability of the same resources to meet the requirements of a rural family medicine residency training program. For example, the Saskatchewan Institute for Applied Science and Technology (SIAST) is a postsecondary institution in the area that provides nursing and paramedic training. In Estevan, shareholders identified SIAST as a positive community partner that could possibly share physical resources such as classroom space and information technology. However, other shareholders cautioned that if dialogue were not engendered, SIAST and the University of Saskatchewan could be in competition for community resources and funding from local resources such as chambers of commerce, cities, and rural municipalities.

Physician champions. There was uniform agreement that each potential site would require a committed physician champion to lead an endeavour of this magnitude. The loss of such a champion from any individual community would pose a formidable challenge to the success of a rural program.

Physician teachers. All parties involved recognize that physician preceptors would be critical to success, as there would be considerable educational time demands that would need to be balanced with clinical responsibilities. The greatest fear was that teaching demands would undermine sustainable clinical time. Potential preceptors feared not only for their own income streams, but also for the needs of the community and the patients. It was often mentioned that the lost clinical time in terms of patient visits would have to be made up elsewhere, likely by community physicians not involved in teaching.

Educational and administration support. Stakeholders acknowledged that the realignment of workloads by physician preceptors will require considerably more

support from the University of Saskatchewan. New skill sets and large time commitments would be required to carry out assessments. This was cited as a central issue, as illustrated by the following quote.

> Practising physicians would need a more comprehensive knowledge of curriculum requirements at the various levels of medical training. For example, how do I know when this resident is ready to graduate? Who will provide this faculty development?

Other specialist support. The need to have other specialist support to deliver rural family medicine training that is comparable with urban sites must be considered. Current specialist gaps in Weyburn and Estevan include pulmonology, endocrinology, gastroenterology, neurology, orthopedic surgery, and pediatrics. Some stakeholders saw rural training as the best preparation for rural work in the future and believed these skills would be better developed without other specialist backup. These stakeholders contend that rural physicians are more practical and residents would obtain mastery through training in a rural setting. Other stakeholders believe there are certain learning opportunities that are only available in large centres that are essential for resident competency and preparation for the Certification Examination in Family Medicine, and that they must be included as part of any training program regardless of the location.

Barriers

Current barriers to the development of Weyburn and Estevan as rural family medicine training sites were identified that could be extrapolated to other sites.

Differing priorities. The visions of the stakeholders in the undertaking of this project are currently not aligned.

Lack of human resources. The introduction of learners to these sites requires additional human resources that could not be supported at this time with the number of physicians currently committed to the concept. Additional human resources in the form of administrative support would also be required and are currently not in place.

Lack of physical resources. In a rural setting, accommodations, information technology and support, learning space, and additional clinical space are necessary and are currently not in place or available at either of the sites.

DISCUSSION

The analysis set out to identify themes that evolved from the data. This departure point reflected the state of the literature, much of which focused on concrete site attributes such as geography, access to additional training resources, teaching facilities, and financial resources.[1,9,25,30,37,38] However, in the interviews, it quickly became apparent that the potential and hindrances in the establishment of a rural family medicine training site hinge primarily on the people rather than on the physical and financial resources.

Virtually every stakeholder assumed that "rural placement equals rural retention," and the literature supports this contention in other health regions. For example, 91% of residents who had completed the Northern Family Medicine Education Program in Happy Valley–Goose Bay, Labrador, were practising in rural areas at the time a study of program outcomes was conducted.[43] A tracking study of the Northwestern Ontario Medical Programme found that resident participants were 7 times more likely to practise in northwestern Ontario compared with nonparticipants,[44] demonstrating rural residency training is a meaningful predictor of future rural practice.

Recruitment is also critical because residents trained at rural sites often return to these sites, even temporarily to do locum work. This provides relief for the preceptor physicians and has a positive effect on patient care, as these physicians have developed unique attributes through their rural training, including the ability to triage acutely ill patients with scarce resources.

A family medicine residency training program could build on some aspects of the existing infrastructure in Weyburn and Estevan, particularly the physical infrastructure. The establishment of a residency training program would represent an important de novo endeavour that could act as an anchor for future distributed medical education programs.

While the University of Saskatchewan and the Ministry of Health representatives were very invested in the model of distributed medical education, the alternative model reflects the vision of family physician stakeholders in designated communities: a model designed around the unique attributes of the communities and the physicians working within them. In this model, local physicians see the potential rural training programs as opportunities to provide residents with the skill set required for competent rural practice. The implicit and even explicit aim is to recruit and retain rural physicians to work in the host communities or at least to work rurally somewhere to ease the collective rural physician shortage.

The need for physical resources was well described in the literature, but there were varying opinions voiced in our study about the acceptability of the same resources to meet the requirements of a rural family medicine residency training program.

The literature also supported the idea that a physician champion was necessary. The loss of a physician champion

from any individual community would pose a formidable challenge to the success of a rural program. While the champion would be the focal point from the residents' perspective, he or she would also be the linchpin for recruitment and support of the site's physician preceptors.

It was often mentioned that the lost clinical time in terms of patient visits would have to be made up elsewhere, likely by community physicians not involved in teaching. A system for coverage would need to be implemented in which preceptors busy with teaching-related duties would be covered by someone in the practice for additional duties such as emergency calls and discussing laboratory results.

Additional consideration must be made to provide sufficient supervision to residents to ensure adequate preparation and recommendation for Certification in family medicine. This matter points specifically to the resident teaching curriculum and the learning goals required for licensing eligibility. More than any other component of teaching responsibilities, preceptor competency in this regard is onerous and specific. There is currently a lack of preceptors with Certification in these communities. Preceptors will need to be well supported here to obtain their own Certification and master the skills necessary to help residents prepare for the Certification Examination in Family Medicine.

The realignment of workloads by physician preceptors would require considerably more support from the University of Saskatchewan. This support would help to clarify the precise curriculum and anticipated time demands before approaching other potential preceptors and inviting them to participate. New skill sets and large time commitments would be required to carry out assessments. Preceptors' clinical skills might be sound, but they might lack experience in the teaching and assessment of learners.

Robust support from and active dialogue with the University of Saskatchewan would be essential, as substantial commitments for preceptor training and ongoing resident support would be needed. Additionally, substantial administrative resources and expertise would be essential for the successful implementation of the program. The need for other specialist support to deliver rural family medicine training that is comparable with urban sites must also be considered.

The visions of the stakeholders are not aligned; effective communication would be required to shape the project in such a way as to meet the goals of all stakeholders. Two additional stakeholder groups who were not explicitly interviewed for this project but whose voices and support would be critical for success would be community members and nonphysician health care team members, as both of these groups would be an integral part of a training program were it to move forward.

Conclusion

A project of this magnitude requires many people with a common vision collaborating to be successful. The barriers to and the predictors of success for implementing rural residency training programs identified in this study could assist with expansion of the test sites and with development of future rural family medicine residency training sites.

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Contributors
All authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests
None declared

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